

TRIRAPHIS MOLLIS (POACEAE: ARUNDINEAE) A SPECIES
REPORTED NEW TO THE UNITED STATES

Prior to this report the occurrence of *Triraphis* and *T. mollis* R. Br. (purple plumegrass) in naturalized populations was not documented in the United States (Chase 1951; Correll & Johnston 1970; Gould 1975; Hatch et al. 1990; Kartesz 1994; Jones et al. 1997). Specimens of this taxon were first collected in naturalized populations by William Godwin on 15 Mar 1993 in Dimmit County. Since the original U.S. collection, William E. Fox III collected the species in the same area on 1 May 1996.

Cultivated specimens collected from an experiment station in Biloxi, Mississippi were located in TAES. However, specimens have not been located that were from escaped or naturalized populations. TROPICOS has reported this species as being present in the U.S. because of a listing by the U.S. Department of Agriculture in their "National List of Scientific Plant Names" (U.S.D.A. 1982). In that U.S.D.A. publication, the distribution was not listed because the plant species was not naturalized.

The species was identified to genus using Clayton and Renvoize (1986) and to species using Simon (1993). The identification was then verified using the Tracy Herbarium (TAES) plant specimens from Australia and specimens from U.S. National Herbarium (US). Lazarides (1970) reported the grass to be grazed in Australia, but stated that it appeared to be less valuable than many short-lived perennials. Clayton and Renvoize (1986) reported the genus to be allied with *Neyraudia* because of gross morphology and the slender microhairs.

Superficially, *T. mollis* resembles *Aristida*. However, upon examination of the spikelets with a dissecting microscope the following observations become apparent. Spikelets have several florets with the reduced floret apical. Also the lemmas are 3-veined, 3-awned. The lemma awns are extensions of the 3-veins of the lemmas. In *T. mollis*, the central lemma awn originates from the lemma apex and lateral awns below and on both sides of the central awn, whereas in *Aristida* the lemma awns originate from a column or the lemma apex and branch from a common point of origin.

Triraphis mollis R.Br., Prodr. Fl. Nov. Holl. 185. 1810. (Fig. 1).

Caespitose perennial. Culms to 50 cm tall, erect to ascending, unbranched; nodes glabrous, purplish black; internodes solid. Leaves mostly basal; sheaths glabrous, rounded, margins free; auricles minute; ligules a fringe of hairs about 1 mm long; blades 6–17 cm long, 1–2 mm wide, flat becoming involute, glabrous. Panicles 7–20 cm long, 8–15 mm wide (excluding awns), contracted, somewhat interrupted, purplish tinged. Spikelets 4–12 mm long,

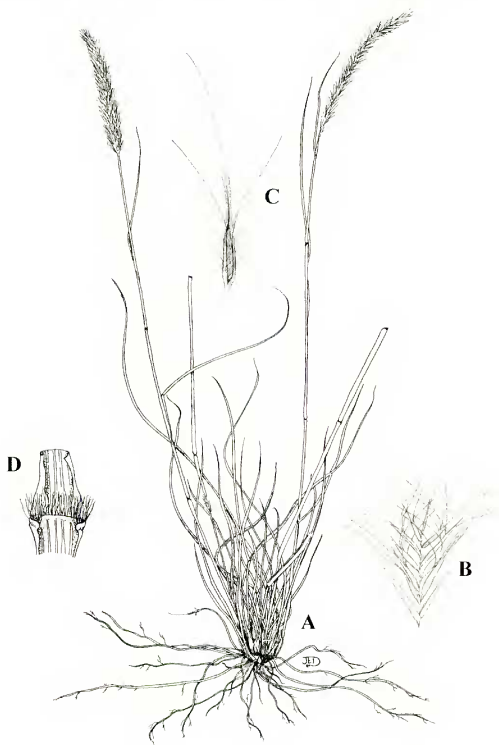


FIG. 1. *Triraphis mollis*. A. habit; B. spikelet, glumes separated from florets; C. floret, palea view with lemma margin and the associated hairs; and D. ligule.

crowded, pedicellate, laterally compressed, disarticulation above glumes and between florets; florets 4–10, callus bearded, reduced florets 1–2 and apical. Glumes subequal (not consistent in which glume is longer), 1-veined, hyaline, shorter than spikelets, awnless; first glumes 3.5–5 mm long; second glumes 4–5.5 mm long; lowermost lemmas 4–5 mm long, 3-veined and 3-awned, deeply bifid with teeth to 1 mm long, membranous, median vein awns 6–9 mm long from between teeth of bifid apex; lateral vein awns 5.5–7 mm long, divergent; lateral veins with long pilose hairs (hairs occasionally on the lemma body); lowermost paleas 2–2.5 mm long, 2-keeled, hyaline, glabrous to scaberulous. Stamens 3; anthers 0.2–0.3 mm long, yellow.

Collection localities were characterized by deep sandy soils of the Brystal Fine Sandy Loam (Stevens & Arriaga 1985). Historically, well drained sandy soils derived from Carrizo Sandstone were called Norfolk Fine Sand (Carter 1931). These soils are derived from parent material in the Carrizo Sands Formation. Carrizo Sand has been shown to have hygroscopic properties that ameliorate the effects of a xeric climate and consequently influence its plant formation (McBryde 1933).

Specimens examined: AUSTRALIA. New South Wales: Sydney; 18??, *J. Maiden s.n.* (TAES). Northern Territory: Simpson Desert, ca 15 km N of Andado Homestead (250 km SE of Alice Springs), 11 Jul 1968 *J. Weber 958* (TAES). Queensland-Warrego District: Charleville, cemetery, Oct-Nov 1945, *M. Clemens s.n.* (TAES).

UNITED STATES. Texas-Dimmit Co.: 14 mi NW of Carrizo Springs on Cometa Road, near sandy dirt road between Cometa and Hwy 277, 15 Mar 1993 *W. Godwin s.n.* (TAES); 13 mi W of Carrizo Springs, 2 mi W of FM 393 along Hwy 277, then 2 mi N on Cometa Road, along W side of road, 1 May 1996 *W.E. Fox III, 548A* (TAES). Associated with *Pappoborum*, *Pennisetum*, *Setaria*, *Acacia* and *Prosopis*.

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REFERENCES

- CARTER, W.T. 1931. The soils of Texas. Texas Agric. Exp. Sta. Bull. 431.
CHASE, A. 1951. Hitchcock's manual of the grasses of the United States, 2nd. ed., U.S.D.A. Misc. Publ. No. 200. U.S. Government Printing Office, Washington, D.C.

- CLAYTON, W.D. and S.A. RENVOIZE. 1986. Genera graminum, grasses of the world. Kew Bull. Addit. Ser. XIII. Her Majesty's Stationary Office, London.
- CORRELL, D.S. and M.C. JOHNSTON. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner.
- GOULD, F.W. 1975. The grasses of Texas. Texas A&M University Press, College Station.
- HATCH, S.L., K.N. GANDHI, and L.E. BROWN. 1990. Checklist of the vascular plants of Texas. Texas Agric. Exp. Sta. Bull. MP-1655.
- JONES, S.D., J.K. WIPFF, and P.M. MONTGOMERY. 1997. Vascular plants of Texas, a comprehensive checklist including synonymy, bibliography and index. University of Texas Press, Austin.
- KARTESZ, J. 1994. A synonymized checklist of the vascular flora of the United States, Canada and Greenland. Univ. of North Carolina Press, Chapel Hill.
- LAZARIDES, M. 1970. The grasses of central Australia. Australian Natl. Univ. Press, Canberra.
- McBRYDE, J.B. 1933. The vegetation and habitat factors of the Carrizo Sands. Ecological Monogr. 3:247-297.
- SIMON, B.K. 1993. A key to Australian grasses. Queensland Department of Primary Industries, Brisbane, Australia.
- STEVENS, J.W. and D. ARRIAGA. 1985. Soil survey of Dimmit and Zavala counties, Texas. U.S.D.A.—S.C.S and Texas Agricultural Experiment Station.